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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,377	04/09/2004	Benjamin Esposito	174 / 329	1615

36981 7590 12/07/2006

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EXAMINER

BAKER, STEPHEN M

ART UNIT PAPER NUMBER

2133

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/821,377

Applicant(s)

ESPOSITO ET AL.

Examiner

Stephen M. Baker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>011305</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "plurality of sequential identification packets" must be shown or the feature canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

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changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because applicant's use of the term "packet" implies that each block of bits so called is independently routable, however applicant's "packets" are apparently not independently routable. Correction is required. See MPEP § 608.01(b).

Claim Objections

4. Claims 1, 6, 11, 14, 17, 22, 27 and 30 are objected to because of the following informalities:

Regarding claim 1, in lines 3-8, "encoding circuit ... for transmitting said data frame with said inserted plurality of identification packets" apparently should be amended as "encoding and transmitting circuit ... for transmitting said data frame with said inserted plurality of identification packets blocks". In lines 4-6, "inserting a plurality of sequential identification packets within said data frame in between said plurality of

sub-packets" apparently should be amended as "inserting a plurality of sequential identification packets blocks ~~within said data frame~~ in between said plurality of sub-packets". In lines 7-8, "transmitting said data frame with said inserted plurality of identification packets" apparently should be amended as "transmitting said ~~data frame~~ sub-packets with said inserted plurality of identification packets blocks". In lines 9-10, "decoding circuit for receiving said transmitted data" apparently should be amended as "decoding circuit for receiving said transmitted ~~data frame~~ sub-packets with said inserted plurality of identification blocks". In lines 12-14, "storing each of said plurality of sub-packets following each of said plurality of sequential identification packets" is prolix and apparently should be amended as "storing each of said plurality of sub-packets ~~following each of said plurality of sequential identification packets~~". In lines 15-16, "stored in the sequence of said preceding sequential identification packet" is apparently poorly-worded, does not convey anything about the role of the "identification packets" in controlling the sequence of stored sub-packet data, and apparently should be amended as "stored in the same sequence as the original data ~~of said preceding sequential identification packet~~".

Claims 6, 11, 14, 17, 22, 27 and 30 have similar problems.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 6, 10, 11, 14, 17-19, 22, 26-28 and 30 are rejected under 35

U.S.C. 102(b) as being anticipated by U.S. patent No. 5,844,918 to Kato (hereafter "Kato").

Kato discloses hybrid ARQ/FEC arrangements for reliably transmitting data in packets, wherein FEC processing is not carried out on a per-packet basis, but on a multi-packet basis instead. In Kato's arrangements a block ("frame") of basic data (BD) is first encoded (Fig. 5a) with a BCH-based error correction code which appends BCH code parity bits (BCHD) to the block, then divided into fixed-length segments (Fig. 5b), then each segment ("sub-packet") is encoded (Fig. 5c) with a CRC which appends CRC parity bits (CRC) to each segment, and finally a packet header ("identification packet") is added (Fig. 5d) to each segment in order to form the packets for transmission. Kato thus discloses "circuitry for maintaining data integrity across data links" comprising an "encoding circuit for dividing a data frame into a plurality of sub-packets, inserting a plurality of sequential identification packets within said data frame in between said plurality of sub-packets, and for transmitting said data frame with said inserted plurality of identification packets." At the receiver, an arrangement for carrying out a process (Fig. 7a-7d) complementary to the transmitting process is required in order to return ("reconstruct") the data to its original form as a block of basic data (BD), providing a "decoding circuit for receiving said transmitted data frame, for identifying each of said plurality of sequential identification packets, and for storing each of said plurality of sub-

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packets following each of said plurality of sequential identification packets, wherein each of said plurality of sub-packets is stored in the sequence of said preceding sequential identification packet".

Regarding claims 2 and 18, Kato's BCH code is a "forward error correction code".

Regarding claims 3, 10, 19 and 26, each of Kato's "sub-packets" is the same size.

Regarding claims 6, 14, 17, 22, 27 and 30, the packet headers presumably carry sequence number information for identifying and (re-)ordering the packets, for Kato's packet-level ("sub-packet"-level) automatic retransmission (ARQ) protocol requires as much.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 5, 7-9, 12, 13, 15, 16, 20, 21, 23-25, 29, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato .

Regarding claims 4, 5, 20 and 21, Kato does not mention counting time or counting the amount of data while receiving the packets. Kato's fixed-length packets may be packed cells. Official Notice is given that the usefulness of counting bit clocks while receiving packed data cells was well known at the time the invention was made. It

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would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement Kato's receiving circuitry with a means for counting data bit clocks ed bits. Such an implementation would have been obvious because the usefulness of counting bit clocks while receiving packed data cells was already well known.

Regarding claims 7 and 23, Kato does not mention a Reed-Solomon code. Official Notice is given that Reed-Solomon codes were well-known, widely-used types of BCH code at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement Kato's BCH code as a Reed-Solomon code. Such an implementation would have been obvious because Reed-Solomon codes were already well-known and widely-used types of BCH code.

Regarding claims 8 and 24, Kato does not mention interleaving. Official Notice is given that advantages to interleaving FEC-encoded data among data packets were well-known at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate an interleaving means into Kato's encoding arrangements. Such incorporation would have been obvious because advantages to interleaving FEC-encoded data among data packets were already well-known.

Regarding claims 9, 13, 16, 25, 29 and 32, Kato does not mention encoding a clock signal within the data to be transmitted or deriving a clock signal from the transmitted data. Official Notice is given that the advantages of encoding a clock signal

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(modulation coding) and deriving a clock signal from the data so encoded (demodulation of a modulation code) when transmitting digital data were well-known at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement Kato's arrangements with means for encoding a clock signal within the data to be transmitted and deriving a clock signal from the transmitted data. Such an implementation would have been obvious because advantages of encoding a clock signal (modulation coding) and deriving a clock signal from the data so encoded (demodulation of a modulation code) when transmitting digital data were already well-known.

Regarding claims 12, 15 and 31, although Kato's packet data is transmitted serially, Kato does not mention the need for a "serializer" and "deserializer". Official Notice is given that the advantages of manipulating data as bytes or words before and after serial transmission, thus requiring a "serializer" and a "de-serializer", were well-known at the time the invention was made. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to implement Kato's encoding and transmission arrangements with a "serializer" and "de-serializer". Such an implementation would have been obvious because advantages of manipulating data as bytes or words before and after serial transmission were already well-known.

Conclusion


9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Baker whose telephone number is (571) 272-3814. The examiner can normally be reached on Monday-Friday (11:00 AM - 7:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Stephen M. Baker
Primary Examiner
Art Unit 2133

smb